would remain the only funding for the System other than the ad valorem tax for almost 50 years, until the County began collecting sewer service charges in 1951.[30]

A few years after construction of the initial sewer system was complete, it became evident that project-based bond funding prevented the regular, systematic capital investment needed to both maintain the System and to improve and extend the System to keep pace with rapid growth within Jefferson County. As early as 1910, industrial development and rapid population growth in the Birmingham area created capacity problems with the System, even though it was only a few years old.[31]

In 1931, one of the first acts of the newly-created County Commission was to declare the System badly overloaded and obsolete, and adopt a resolution stating "an urgent and imperative necessity for immediate construction of an addition to the Jefferson County Sanitary Sewer System in the interest of public health."[32] The County estimated the necessary improvements would cost $1.5 million. However, the County did not issue any new bonds and had to fund the new improvements entirely from funds on hand. The County ultimately appropriated only $450,000, less than one-third of the full amount needed, and the full balance in the sanitary fund generated from refinancing the initial $500,000 sewer construction bonds issued in 1901.[33] Failure to perform the necessary improvements had a negative impact on the System's ability to serve the growing needs of the County. This appropriation of less than half the estimated cost of necessary improvements would become the County's standard pattern of behavior in responding to recommendations for additional funding for the System.

Despite the increasing need for extension and improvement of the System, from 1921 to 1939, the County did not levy the full 0.5 mills sewer ad valorem tax authorized by Act 716, and, with the exception of a single $50,000 bond issuance in 1941, the County did not issue any additional bonds to support and improve the System from 1901 until 1949.[34] The lack of adequate funding continually delayed and prevented necessary improvements to the System.[35]

Inadequate funding continued to cause deterioration of the System throughout the 1940's. The sole funding source for the System was the sewer ad valorem tax, which only generated around $170,000 per year, barely enough to keep the System running, much less initiate improvements.[36] Reports issued in 1946 and 1947 concluded that the two System trunk lines put in service in 1906 had deteriorated markedly due to a lack of investment in their upkeep and maintenance, and the 1905 brick sewers had become obsolete by 1934. The entire System was in disrepair and, despite some additions, remained grossly inadequate to serve the sanitary needs of the County.[37] Heavy rains caused sewers to overflow into homes and businesses and sewage

---

[30] *Id.* at 24-25, 38, 44 and Appendix D to the PARCA Report. The County gained ratemaking authority with Amendment 73, which is discussed in more detail in Section II.B.3 *infra.*
[31] *Id.* at 22-24.
[32] *Id.* at 29 (quoting County Resolution).
[33] *Id.*
[34] *Id.* at 25, 34.
[35] *Id.* at 24-25.
[36] *Id.* at 38.
[37] *Id.* at 32.

flowed into City streets and ditches, and at times even covered the fairways of the Birmingham Country Club.[38]

The structure of obtaining legislative approval for bond issuances on a project-by-project basis was of limited value when the ability to generate revenue to repay the bonds and operate the system was limited to the revenue generated by the ad valorem tax. The County needed authority to finance regular maintenance and improvements to the System on its own, without the involvement of the state legislature. The state legislature agreed and passed legislation in 1947 at the County's request to amend the state constitution to grant that authority to the County.

3. *The Local Era 1950-1965: The County Gains Financing Autonomy from the State but Fails to Use its New Bond and Ratemaking Power to Adequately Fund the System.*

The "Jefferson County Sewer Amendment," Amendment 73 to the Alabama Constitution, was ratified by the State's voters in the 1948 general election.[39] A copy of Amendment 73 is included in the Appendix at A-5. This amendment allowed the County to issue general obligation bonds in an amount "not exceeding 3 percent of the assessed valuation of the taxable property" in the County "to pay the expenses of constructing, improving, extending, and repairing sewers and sewerage treatment and disposal plants."[40]

Despite this new financing authority, the pattern of consistent underfunding of the System continued. A year prior to ratification of Amendment 73, the County had commissioned a prominent Chicago engineering firm, Alvord, Burdick & Housen, to perform a detailed study of the System and make recommendations for needed maintenance, repairs, and improvements.[41] The County Commission received the final report in April 1948. The report urged immediate repairs and additions at an estimated total cost of $22.5 million, with annual costs thereafter estimated at $1.1 million.[42] The Commission referred the report to a Citizens Advisory Committee, which recommended a $10 million bond issuance, less than half the cost of the necessary improvements, which the committee found was sufficient to fund only the most urgently needed items.[43] At a bond issue election in May 1949, County voters approved the $10 million bond issue.[44] Even though the pressing need for repairs and improvements to the System was identified in engineering reports as early as 1946, it was 1951 before construction contracts were let and 1953 before most construction was at or near completion.[45]

The Chicago engineering report also recommended the County implement sewer rental or service charges as an additional source of revenue, a practice already common in other urban areas.[46] Although the County gained the authority to impose rates in November 1948 following ratification of Amendment 73, due to procedural and logistical hurdles, collection of charges

---

[38] *Id.* at 39.
[39] *Id.* at 41.
[40] ALA. CONST. amend. 73.
[41] PARCA Report at 38.
[42] *Id.* at 40.
[43] *Id.* at 41.
[44] *Id.* at 42.
[45] *Id.* at 38.
[46] *Id.* at 40-41.

would not begin for almost three more years, and then only for a small percentage of System customers.[47] The Birmingham Water Works and Sewer Board ("BWWB") refused to collect charges through residents' water bills, so the County had to create a new eighteen-employee billing department charged with the massive task of generating a customer list and inspecting and verifying connections. Because of the lack of mandatory hookup enforcement, thousands of homes and businesses throughout the County were not connected to the System. During the first two years of County billing, the billing department had to review and resolve more than 10,000 applications from residents seeking to be removed from the billing list. These difficulties continued until 1961, when the legislature passed an act requiring water utilities to collect municipal sewer charges.[48] These logistical hurdles prevented the County from taking full advantage of its new ratemaking authority to address continued underfunding of the System.[49]

By the mid-1950s, citizens began to feel the impacts of the County's failure to fully fund necessary System improvements. In 1953, the County Board of Health issued a warning to all residents of the County not to swim or fish in **any open stream** in Jefferson County because "all watersheds in this area carry pollution from sewage."[50] A 1953 citizens advisory committee report recognized the lack of adequate funding for the System and recommended that the Commission forego any plans for secondary treatment (i.e., chemical and other purification), focusing instead on expanding the collection system and maintaining the facilities for primary treatment only (removal of floatable and settable solids).[51] This decision would later prove shortsighted when the federal Clean Water Act ("CWA") was enacted in 1972 requiring secondary treatment and imposing strict standards.[52]

By 1957, sewer overflows were still common and the County health officer called for immediate action to prevent outbreaks of polio, typhoid, and hepatitis. County engineers estimated that it would cost approximately $10 million just to address the System's most pressing problems, and another $20 million to properly address its problems.[53] At that time, the sewer charges and ad valorem taxes were producing System revenues of around $1.5 million per year.[54] Despite these pressing needs, the County would not undertake another major bond issuance until 1968, and resisted raising sewer rates until 1972.

With Amendment 73 in 1948, the County finally had the power to raise funds for the System on its own through bond issuances and sewer rates. Unfortunately, whether for political reasons or otherwise, the County failed to use its newly granted authority, and the pattern of inadequate funding of the System continued. With each passing year, population and industry continued to grow, yet the County fell further and further behind in necessary System improvements and maintenance. Ultimately, it would take intervention from the state and the federal government, and litigation to force the County's hand.

---

[47] PARCA Report at 44.
[48] *Id.* at 44-45 (discussing Ala. Act No. 886 (Sept. 8, 1961)).
[49] Billing remains a challenging issue for the System today, as discussed in Sections III.A.2 and III.A.3 *infra.*
[50] *Id.* at 43.
[51] *Id.*
[52] *Id.* at 58. The Clean Water Act is discussed in more detail in Section II.B.4 *infra.*
[53] *Id.* at 45.
[54] *Id.* at 54.

4. *The Federal Era 1965-1995: Despite Moratoriums, Litigation and Increased Pressure from State and Federal Regulators, the County's Failure to Provide Adequate Funding to the System Continues.*

The County Commission finally made an official response to the growing sewer crisis in January 1967, when it announced a ten-year $43 million sewer improvement program. Although federal funds were expected to cover about $13 million of the costs, the Commission did not implement a plan to fund its $30 million share of the program, ultimately losing the federal funds.[55] Later that year, pressure from government regulators began when the Alabama Water Improvement Commission ("AWIC") gave the County six months to come up with a plan to upgrade five treatment plants that were illegally discharging raw sewage into area streams. The County's 1967 plan included upgrades to address this issue, but it would be two more years before the County began efforts to secure funding for the plan.[56]

In March 1971, AWIC issued the first of what would be several federal, state, and local level moratoriums prohibiting new sewer connections throughout the County.[57] These moratoriums were issued periodically throughout the 1970s and remained in place until the mid-1980s.[58] The moratoriums slowed economic development throughout the County, and also resulted in the proliferation of private on-site wastewater systems as developers tried to work around the connection bans. These small on-site developer systems tended to be relatively untested, poorly regulated, not sustainable and drastically more expensive to operate.[59]

The moratoriums worsened one of the longstanding problems with the System. The lack of mandatory hookup enforcement throughout the System's history had already resulted in the construction of thousands of homes and businesses in the County that were not connected to the System, and the moratoriums resulted in still more unconnected development. The continued construction of new homes and businesses that were not connected to the System reduced the size of the customer base available to share in the increasing costs of operating and maintaining the System and protecting the area water supplies. Because the System's costs were spread over a smaller customer base, the potential impact of necessary revenue increases on each customer's rates was much higher than it would have been had the customer base continued to grow with the community, making the needed rate increases even less politically palatable to the County Commission.

In April 1971, the County finally began steps to fund its $43 million 1967 sewer improvement plan by lobbying the state legislature to increase sewer rates, which had remained

---

[55] *Id.* at 46-47.
[56] *Id.* at 47.
[57] *Id.* at 47.
[58] In addition to the 1971 county-wide moratorium, AWIC also issued a moratorium in September 1975 for the Shades Valley area. *Id.* at 62. When the AWIC Shades Valley moratorium was lifted, the County instituted its own ban on sewer connections in Shades Valley, which remained in place until 1984. *Id.* at 63. In 1976, the County, under instructions from the EPA, also ordered a moratorium on new connections to lines serving the Cahaba River and Patton Creek plants which remained in place until 1985 and 1987, respectively. *Id.* In June 1977, the County restricted development in Brewster Valley, and in March 1978 issued a moratorium for the Turkey Creek system, which remained in place until 1982. *Id.* at 63-66.
[59] *Id.* at 66.

the same since first imposed in 1951. Despite the fact sewer rates had not been raised in twenty years, and were less than one-third the typical rates paid in other southeastern cities, the state legislature spent months in hotly-contested hearings haggling over potential caps on the County's ability to impose rate increases.[60] The negotiations ended abruptly when the Alabama Supreme Court issued an advisory opinion holding that Amendment 73 gave the County the exclusive authority to fix sewer rates.[61] With this ruling, the County finally had clear legal authority to raise rates to fund the desperately-needed improvements to the System.

Amidst strong public opposition, in early 1972 the County unanimously passed the first sewer rate increase *ever*. Rates set at a level the County estimated was sufficient to finance the $30 million in bonds needed to pay for the improvements identified in the 1967 ten-year plan.[62] The bond issuance, however, was postponed indefinitely due to litigation challenging the legality of both the proposed bonds and the rate increases necessary to repay the bonds. In the meantime, public opposition to the rate increase continued. In August and November, the County Commission bowed to public pressure and passed rate reductions that eventually nearly wiped out the rate increase entirely.[63] Thus, despite finally obtaining the clear legal authority over the System's financing, the County again failed to use its authority to adequately fund the System.

At the same time the County was failing to make the improvements and investment necessary to bring the outdated and overloaded System into compliance with existing minimum treatment requirements, legislators and regulators were actively developing much more stringent minimum treatment standards. In 1972, Congress enacted the CWA,[64] administered by the EPA, ushering in an era of much greater federal scrutiny of wastewater treatment programs.[65] The CWA required all wastewater to receive treatment prior to discharge into navigable waterways (i.e., no more discharges of untreated sewage), set standards for both primary and secondary treatment of wastewater, and authorized penalties for violations of the new requirements.[66] Because improvements to the System had been both insufficient and infrequent, the County was forced to quickly develop a multiyear capital improvement plan to cure the inadequacies of the System and comply with CWA.[67] To finance the costs, the capital improvement plan called for a series of regular rate increases and bond issuances to replace the sporadic, project-based funding and half-measures that had remained the norm since the System was first created in 1901.[68]

Almost immediately after announcing its plan in 1975, the County Commission fell back into its well-established pattern of failing to follow through with its announcements and meet even the most minimum funding requirements of the System. The County did not issue the first $10 million in bonds until 1976, almost a year later, and only had a conditional plan for future bond issuances.[69] None of the planned bond issuances for 1979 through 1981 were

---

[60] *Id.* at 47-48.
[61] *Id.* at 48; *Opinion of the Justices,* 251 So. 2d at 759.
[62] PARCA Report at 49.
[63] *Id.* at 50.
[64] 33 U.S.C. §§ 1251 *et seq.*, as amended.
[65] As the PARCA Report notes, prior to enactment of the Clean Water Act, discharge of raw sewage into watercourses was "widespread, and was perfectly legal." PARCA Report at 58.
[66] *Id.*
[67] *Id.* at 61.
[68] *Id.* at 65.
[69] *Id.*

implemented.[70] Although the County tried to make up for the failure to issue bonds as planned by raising rates above planned levels in 1980, it continued to fall behind in funding the System, and moratoriums preventing additional sewer connections remained in place.[71]

In 1981, the County Commission created a blue-ribbon committee to prioritize sewer improvement projects and recommend ways to fund the necessary improvements. After two years of work, this committee developed a priority list of forty-eight projects with a total estimated cost of $157 million.[72] The committee emphasized that its recommendations were not a final solution, but instead represented the bare minimum necessary to meet mandatory wastewater standards. The committee observed that "[f]uture public servants must address the problem of continued expansion and technical progress" of the System.[73] Despite these warnings, the County Commission ultimately only issued about 60% of the bonds the committee recommended. Though the committee assured the County that the rate increases would leave rates very low when compared to other similar communities, the County only raised rates to half the level recommended by the committee.[74]

The County began to address the deficit in System funding in the early 1990's when the Commission began enacting multi-year sewer rate increases for the first time,. It was 1995 before these multi-year rate increases reached the levels recommended in the 1983 blue-ribbon commission report.[75]

Unfortunately, just as the County was beginning to make some headway towards eliminating the serious deficit in the funding required for the System to meet minimum standards, state regulatory requirements became much more stringent, particularly in regard to secondary treatment requirements and bans on bypassing treatment during periods of high wastewater flow volumes.[76] In 1993, the System's long-existing environmental problems began to reach a crescendo. The successor to AWIC, the Alabama Department of Environmental Management ("ADEM"), ordered the County to implement a $416 million improvement plan and issued a moratorium on new connections to the Leeds treatment plant because of excessive pollutants discharged from that facility into the Little Cahaba River.[77] Later that same year, the EPA required the County to account for all unpermitted discharges of pollutants from its wastewater treatment plants since 1988.[78]

In November 1993, a lawsuit was filed[79] alleging that the County was discharging pollutants into the Cahaba and Black Warrior Rivers without the required permits and that the County's wastewater treatment plants were violating the terms of their permits.[80] The Cahaba

---

[70] *Id.*
[71] *Id.*
[72] *Id.* at 66.
[73] *Id.* (quoting committee report).
[74] *Id.* at 66-67.
[75] *Id.* at 68.
[76] *Id.*
[77] *Id.* at 69-71.
[78] *Id.*
[79] *Kipp, et al. v. Jefferson County, Alabama, et al.*, United States District Court for the Northern District of Alabama, Civil Action No. 93-G-2492-S.
[80] PARCA Report at 71.

River Society intervened in that lawsuit, which was consolidated with a similar lawsuit filed by the EPA[81] in 1994. In January 1995, the judge ruled for the plaintiffs, finding that the County had made illegal discharges exceeding permit levels on a number of occasions.[82] The judge ordered the parties to present a plan to remedy the sewage overflow problem. The County agreed to entry of a consent decree (the "Consent Decree") in December 1996 requiring it to take a broad range of remedial measures. Included within the Consent Decree was a provision giving the County authority to assume responsibility for municipal sewer lines that feed into the County's system, thus ending the divided responsibility identified as a crucial barrier to the System's success almost a century earlier. A copy of the Consent Decree is included in the Appendix at A-6.

C. The Consent Decree.

Pursuant to the Consent Decree, the County assumed control of and responsibility for twenty-one separate municipal sewer systems previously owned and maintained by various municipalities throughout Jefferson County. At that time, the County was unaware of the exact condition and extent of these municipal systems; however, the County did not receive any compensation from any of these municipalities for any of the remediation efforts required under the Consent Decree.[83] The County assumed ownership of and responsibility for approximately 11,500,000 feet (2,178 miles) of sewers, an amount twice the size of the County system, with no significant due diligence or compensation.[84] In fact, the municipalities had largely never invested in any sort of comprehensive maintenance program for their sewers, and the County had little, if any, knowledge of the condition of the former municipal sewers. However, in the Consent Decree, the County committed itself to make whatever improvements were necessary to meet a set of near-impossible goals that even the best systems in the country cannot continuously achieve. These commitments included, among other things, the promise to improve and expand the System in order to:

- Completely eliminate further bypasses and unpermitted discharges of untreated wastewater containing raw sewage to the Black Warrior and Cahaba River Basins;
- Completely eliminate sewer system overflows;
- Achieve full compliance with the County's National Pollutant Discharge Elimination System ("NPDES") permits; and
- Achieve full compliance with the CWA by minimizing the discharge of pollutants into navigable waters, maintaining a high level of water quality, and preserving marine and other wildlife.[85]

---

[81] *United States v. Jefferson County, Alabama, et al.*, United States District Court for the Northern District of Alabama, Civil Action No. 94-G-2947-S.
[82] PARCA Report at 71.
[83] Federal Action, Parties' Joint Submission Pursuant to October 7, 2008 Order, Doc. # 32 at 3, ¶ 20 (Nov. 11, 2008) (herein, the "Federal Joint Submission").
[84] BE&K Report at 7-2. The BE&K Report is discussed in more detail in Section II.C.1 *infra.*
[85] Consent Decree at 12, 19-101.

The County also agreed to pay the United States $750,000 for its prior violations of the CWA, spend $30 million on supplemental environmental projects, and pay numerous stipulated penalties in the event it failed to comply with the Consent Decree in the future.[86] As of this date, five of the County's nine sewer basins are still subject to the Consent Decree.

The Consent Decree was approved and executed by both the County and the State of Alabama (represented by the Attorney General). The State was a party to the Consent Decree litigation, and under federal law may be held liable for violations of the Consent Decree if state law prevents the County "from raising revenues needed to comply with such judgment."[87]

1. Construction to Comply with the Consent Decree.

In order to comply with the Consent Decree, the County began rehabilitation and improvement of the System pursuant to the Jefferson County Sewer Improvement Program, It rehabilitated approximately 657 miles of sewer mains and completely replaced another eighty miles of sewer lines from 1996-2008.[88] The equivalent of more than 20,000 manholes were rehabilitated or replaced during that timeframe.[89] Although the lack of budgeting, planning, and recordkeeping makes it difficult to determine precisely where all the money went, the best estimates of the total expenditures aimed at complying with the Consent Decree, CWA, and NPDES permits, and related to system expansion, range from approximately $2.3 billion to $2.5 billion. In addition, the System has approximately $240 million in funds, representing proceeds fro warrants, available primarily for construction purposes, in various reserve accounts.[90]

While the EPA set the compliance objectives the County was required to meet, the County was responsible for creating a plan to meet those compliance objectives.[91] The capital improvement program the County created to comply with the Consent Decree suffered from significant design flaws and was poorly implemented, leading to both substantial and wasteful cost overruns and a failure to eliminate all problems related to sewer system overflows.[92] These flaws are examined in detail in a 2003 report the County commissioned from BE&K Engineering Company (the "BE&K Report").[93] A copy of the BE&K Report is included in the Appendix at A-7. Among the problems identified by BE&K:

---

[86] *Id.* at 102-114. The County has paid approximately $577,000 in stipulated penalties to date.
[87] Consent Decree at 6.
[88] Special Masters Report at 22.
[89] *Id.*
[90] By the County's own estimation the cost to complete the repairs and rehabilitation necessary to comply with the Consent Decree had grown from an initial estimate of between $250 million and $1.2 billion in 1996 to $3.05 billion in 2003. BE&K Report at 2-2.
[91] *Id.* at 7-4.
[92] A sanitary sewer system overflow, or SSO, occurs when the flow of wastewater exceeds the capacity of the sewer system and untreated sewage bypassing the treatment process is released directly into local waterways.
[93] BE&K was assisted in the preparation of its report by CH2M Hill, Porter, White & Company, and PARCA.

- ESD's approach to evaluating and controlling Sanitary Sewer Overflows (SSOs) was too heavily influenced by ESD practices and local engineers, and was grounded in field data collection and analysis instead of newer, more effective approaches being successfully applied in the wastewater industry;[94]

- ESD did not incorporate the available technical and business organizational tools and methods necessary to manage a project of the magnitude imposed by the Consent Decree;[95]

- ESD did not properly take into account how dealing with the twenty-one municipal systems it was absorbing would impact the conveyance system flows;[96]

- There was no overall design standard created to guide facility designs;[97]

- The County never established an asset management process that would allow management to properly prioritize and budget for needed repairs;[98]

- Some of the wastewater treatment plants were designed to treat peak flows without storage, even though peak flow storage facilities were also added at these plants, which both wasted capital and presented additional operation problems;[99]

- Many of the plants were designed to use disinfection systems that were more expensive than other, less expensive systems that offered operational advantages;[100]

- Most projects in the compliance program were not budgeted and ESD did not issue cost reports, eliminating any ability to forecast budget overruns or any sense of budget discipline – ESD management indicated to BE&K that they did not operate on a budget;[101]

- There was no attempt to schedule projects to ensure that they were executed as originally planned – as a consequence, most projects were delayed;[102]

- ESD did not utilize any sort of value engineering process to identify cost savings in the structure of its compliance program;[103]

- ESD focused on complying with the mandates of the Consent Decree without adequate strategic planning or action; and[104]

---

[94] *Id.* at 7-5
[95] *Id.*
[96] *Id.* at 7-6
[97] *Id.*
[98] *Id.* at 7-7.
[99] *Id.* at 7-8 through 7-10.
[100] *Id.* at 7-9
[101] *Id.* at 3-2, 3-5
[102] *Id.* at 3-3.
[103] *Id.* at Chapter 4.

- ESD made spending decisions without any meaningful budgets or controls.[105]

In 2003, BE&K estimated $365 million in additional financing was needed to complete the projects necessary to comply with the Consent Decree, and an additional $246 million would be needed to repair known defects in the System following termination of the Consent Decree.[106]

In addition, BE&K noted the County's capital improvement plan addressed the sewer system overflow problems by essentially over-building the System's treatment capacity, while at the same time neglecting to examine or address the collection system causes of the overflows. Infiltration and inflow are two potential causes of sewer system overflows. Infiltration is groundwater that enters the sewer system through cracks or leaks in the collection pipes; inflow is storm water that enters the collection system at direct points of connection, such as through illegal connections of sump pumps or drains to the sanitary sewer system. Infiltration and inflow cause hydraulic overloading of the sewer collection system which is designed only to handle lower routine volumes of wastewater flows, and place an extreme burden on wastewater treatment facilities and processes.[107]

Because inflow and infiltration enter the system differently, they must be addressed differently. Inflow is easier to locate and costs less to remove, and because inflow typically involves higher volumes, it typically contributes more to overflows than infiltration. The County did no sophisticated hydraulic modeling to determine how infiltration and inflow volumes would impact the System, and the County's improvement plan to comply with the Consent Decree lumped both infiltration and inflow together, preventing the County from receiving the reduced costs and higher benefits that would have resulted from examining the cost-effectiveness of multiple inflow and infiltration reduction alternatives.[108] The System continues to have significant problems with infiltration and inflow, resulting in continued challenges to System operations.

2. System Financing to Comply with the Consent Decree.

In 1997, the County began borrowing vast sums of money in order to finance the improvements needed to comply with the Consent Decree.[109] The debt issued by the System increased by more than 1000 percent in the eight years between 1995 and 2003.[110] As BE&K pointed out, this increased debt radically changed the capital requirements of the System and meant that, "sewer rates, assuming no additional debt restructuring and refundings, must increase at rates well above inflation."[111] "The County's sewer financing structure reflects a desire to

---

[104] *Id.* at Chapter 5.
[105] *Id.* at 12-2.
[106] *Id.* at 2-13. The Receiver has since determined that due to additional problems discovered in the operation of the System since appointment, these 2003 estimates are too low. *See* discussion at Section III.B *infra.*
[107] Infiltration of the municipal sewer collection lines within Jefferson County was identified as a problem as early as 1912. *See* discussion at Section II.B.1 *supra.*
[108] BE&K Report at 7-6 and 7-7.
[109] As BE&K pointed out, the "capital investment has not expanded the customer base materially; therefore, existing customers bear the cost of these expenditures." *Id.* at 12-1.
[110] *Id.*
[111] *Id.*

finance a very large capital program while delaying rate increases as long as possible."[112] The County borrowed these monies with:

> no realistic long-range financial plan, no determination of how much capital expenditure the County could afford to finance, how much burden the ratepayers could afford to assume, and no attempt to contain the amount of the capital expenditures or debt within the limits of what the County and the users can afford.[113]

All of the County's financing structures were extremely back-loaded; in exchange for lower debt service payments in the early years, the structures called for extremely large debt service requirements in later years. This was due in part to the fact the County financed the first several years of interest payments in order to postpone the inevitable rate increases as long as possible. As those interest payments came due, the County's total debt costs, and the rate increases that would be necessary to meet those costs, would began to increase significantly in escalating amounts each year. The County had no plan on how it would meet these rising future costs.

The monies for the capital improvement program were borrowed through warrants issued by the County and secured by the revenues of the System (the "System Revenues"). The warrants were issued in various series pursuant to a Trust Indenture dated February 1, 1997 (the "Indenture") that was amended through numerous "Supplemental Indentures" as new series of warrants were issued. The Indenture also established a Trustee (the "Indenture Trustee") charged with representing the interests of warrant holders and ensuring the County complied with the terms of the Indenture. The original Indenture Trustee was AmSouth Bank; the current Indenture Trustee is the Bank of New York Mellon.

The Indenture was judicially validated in an order entered by the Jefferson County Circuit Court on August 27, 2001 (the "Validation Order"), in *Jefferson County, Alabama v. The Taxpayers and Citizens of Jefferson County, Alabama*. A copy of the Validation Order is included in the Appendix at A-8. In the Validation Order, the Court held that the warrants were "the valid, binding revenue obligations of the County, its successors and assigns, as provided in the Indenture."

The complete series of warrants issued pursuant to the Indenture are as follows:

[112] *Id.* at 12-9.
[113] *Id.* at 12-2.